

REMARKS

In section 4 of the Office Action, the Examiner rejected claims 9-13, 20, and 21 under 35 U.S.C. §102(e) as being anticipated by the Takashimizu patent.

Applicants' Argument - The Takashimizu patent shows in Figure 15 a digital broadcasting signal receiving, recording, and reproducing apparatus including an antenna 501, a tuner 502, a QPSK demodulator 503, a forward error correction block 504, a switch 505, a first packet separating circuit 506, an MPEG2 decoder 507, a second packet separating circuit 509, a packet replacing circuit 510, an interface circuit 511, a recording and reproducing apparatus 512, a system controller 513, an output circuit 514, and a video and audio output terminal 518.

A satellite input signal is received by the antenna 501. The tuner 502 tunes to a channel in response to the system controller 513. The output signal from the tuner 502 is demodulated by the QPSK demodulator 503, and the forward error correction block 504 corrects errors in the demodulated signal. The error corrected signal is provided via the switch 505 to the first packet separating circuit 506. The first packet separating circuit 506 selects a desired program from the

multiplexed programs in the tuned channel. The selected program is decompressed by the MPEG2 decoder 507 to reproduce both a digital video signal and a digital audio signal. The digital video signal and the digital audio signal from the MPEG2 decoder 507 are converted into analog video and audio signals, respectively, by the output circuit 514, which supplies the analog video and audio signals to the video and audio output terminal 518.

The first packet separating circuit 506 operates according to steps 201 to 209 of Figure 3 to extract a selected video and audio stream. At step 201, a user selects a television program (identified by the Takashimizu patent as a logical channel) from a plurality of programs multiplexed in the physical channel to which the tuner 502 is tuned. At 202, a program association table is received in a packet of the multiplexed signal. The program association table is contained in the PSI (Program Specific Information). At 203, a check is made as to whether the selected television program (logical channel) is present in the program association table.

If the selected television program (logical channel) is not present, a network information table in the PSI is retrieved in order to acquire a physical channel containing the selected television program at a

step 204. The network information table contains a information on the physical channel corresponding to the selected television program. At step 205, the tuner 502 is controlled to select the physical channel corresponding to the selected television program. At step 206, a program association table is retrieved from the physical channel tuned by the tuner 502.

If the program association table acquired at step 202 contains the logical channel for the selected television program, or after step 206, a PMT (program map table) is acquired at step 207. This program map table contains the PID (packet ID) of the video and audio for the selected television program.

The PID and the program clock reference of the selected television program are acquired at step 208. The acquired PID is provided to a demultiplexer to demultiplex the selected video and audio streams out of the multiplexed physical channel, and the demultiplexed video and audio streams are provided to the MPEG2 decoder 507.

A television program can also be recorded by use of the second packet separating circuit 509, the packet replacing circuit 510, the interface circuit 511, and the recording and reproducing apparatus 512 mentioned

briefly above. The second packet separating circuit 509 extracts data which is required when the user wishes only to record the selected television program. The program association table, the program map table, the video and audio data, a program clock reference, and information related to the selected television program are extracted and are recorded on the recording/reproducing apparatus 512 via the packet replacing circuit 510 and the interface circuit 511.

The packet replacing circuit 510 is shown in Figure 16 of the Takashimizu patent. A buffer 44 temporarily stores several bytes of data from the forward error correction 504, a PID detecting circuit 40 detects a PID of a program association table from the data stored in the buffer 44, a PID coincidence circuit 41 compares the PID detected by the PID detecting circuit 40 with a preselected value stored in a PID register 56 entered by the system controller 513 (this preselected value corresponds to a program to be recorded), a storage circuit 42 stores the program association table only for the program to be recorded, and a selecting circuit 43 selects the data from the buffer 44 or the data stored in the storage circuit 42 in response to the PID coincidence circuit 41.

Figure 17 of the Takashimizu patent is a timing chart for the packet replacing circuit 510. Several bytes at a time of an output 45 from the second packet separating circuit 509 are sequentially stored in the buffer 44. At time 64, the PID detector 40 detects a PID 55 from the bytes stored by the buffer 44. The PID coincidence circuit 41 compares the detected PID 55 to the PID 57 stored in the PID register 56. When the detected PID 55 coincides with the stored PID 57, a detection result 61 is set high as indicated at 65. Conversely, when the detected PID 55 does not coincide with the stored PID 57, the detection result 61 remains low as indicated by a broken line of 66.

When the detection result 61 is low, the selecting circuit 46 selects the output from the buffer 44. When the detection result 61 is high, the selecting circuit 46 selects the data that is stored in the storage circuit 42. Thus, when a program is recorded, a program association table containing the PIDs of a plurality of multiplexed programs is replaced by a program association table containing only the PID of the recorded television program.

By contrast, independent claim 9 is directed to a method of replacing a data component identifying a

first selected channel with a data component identifying a second selected channel. The data component identifying the first selected channel is contained in a PSIP table received in a digital television signal, and the first selected channel is different from the second selected channel. The method involves finding the data component identifying the first selected channel in the PSIP table received in the digital television signal, and modifying the digital television signal by replacing the data component identifying the first selected channel with the data component identifying the second selected channel. The data component identifying the second selected channel is not contained in the received digital television signal.

The Takashimizu patent discloses program association table replacement where a program association table containing the PIDs identifying the program map tables for all of the programs in a single transport stream can be replaced by a program association table containing the PID that identifies the program map table for only the selected program to be recorded.

There is no disclosure in the Takashimizu patent that the component data identifying a first selected channel is replaced with a data component

identifying a second selected channel. Instead, the Takashimizu patent discloses only that there is less data following replacement than before, i.e., the replacement of data involves the removing of data rather than the changing of data. There is no disclosure in the Takashimizu patent that one channel identifying data component is switched for a different channel identifying data component. Indeed, because the signal is being recorded, replacing a channel identifying data component for a different channel identifying data component in the signal does not even make sense. There is no need to change the channel information in the recorded signal.

By contrast, a translator, which receives on one channel and re-transmits on another channel, must inform the receiver of the new relationship between the physical channel and the logical channel. Therefore, unlike the system disclosed in the Takashimizu patent, there is a need to change channel information in the retransmitted signal.

Accordingly, because the Takashimizu patent does not disclose replacing a channel identifying component in a signal for a different channel identifying component, the Takashimizu patent does not anticipate independent claim 9.

Moreover, independent claim 9 recites that the replacement data component identifying the second selected channel is not contained in the received digital television signal. By contrast, the information contained in the replacement program association table disclosed in the Takashimizu patent is also contained in the received program association table, i.e., the program association table that is stored in the buffer 44 and that is to be replaced. To be sure, the received program association table contains more data because it contains the PIDs identifying program map tables for other programs. However, the received program association table also contains the PID identifying the program map table for the selected program. Therefore, program association table replacement as disclosed in the Takashimizu patent does not involve replacement of a data component identifying a first selected channel with a data component identifying a second selected channel where the data component identifying a second selected channel was not in the received program association table.

Accordingly, because the Takashimizu patent does not disclose that a channel identifying component not contained in the received signal is used to replace a

channel identifying component that is in the received signal, the Takashimizu patent does not anticipate independent claim 9.

The Examiner's Response - The Examiner cites two portions of the Takashimizu patent as support for the Examiner's assertion that the Takashimizu patent discloses replacing the data component in the baseband television signal that identifies the first selected channel with a data component identifying a second selected channel different from the first selected channel. Specifically, the Examiner asserts that the PAT replacement disclosed in the Takashimizu patent is equivalent to replacing the data component in the baseband television signal that identifies the first selected channel with a data component identifying a second selected channel different from the first selected channel.

Applicants' Rebuttal - The Examiner's assertion is not correct. There is no mention in the Takashimizu patent that program association table replacement includes the substitution of a data component that identifies one channel for a data component that identifies a different channel.

Indeed, as pointed out above, what would be the point of changing a data component that identifies one channel to a data component that identifies a different channel? The program is being recorded, not translated. Moreover, as disclosed in the Takashimizu patent, the amount of data being stored in the program association table is merely being reduced.

Accordingly, the Takashimizu patent does not anticipate independent claim 9.

Because the Takashimizu patent does not anticipate independent claim 9, the Takashimizu patent likewise does not anticipate dependent claims 10-13, 20, and 21.

In addition, dependent claims 11 and 13 recite the re-computing of a cyclic redundancy code based upon the new data component and the replacement of the old cyclic redundancy code in the PSIP packet with the re-computed cyclic redundancy code.

Applicants' Argument - The Takashimizu patent merely discloses that a CRC code of the replacement data may be calculated or added to the data 21 of the actual packet. The Takashimizu patent does not also disclose that a CRC contained in the received signal is replaced by the newly calculated CRC.

For this reason also, the Takashimizu patent likewise does not anticipate dependent claims 11 and 13.

The Examiner's Response - The Examiner argues that the Takashimizu patent does indeed, disclose the inventions of dependent claims 11 and 13. In support of this argument, the Examiner cites the only paragraph of the Takashimizu patent that mentions CRC calculation.

Applicants' Rebuttal - The paragraph cited by the Examiner does not disclose or suggest that a CRC of an incoming signal be replaced with a new CRC. The Takashimizu patent merely discloses that a CRC be calculated and added to the signal, not replaced in the signal.

Accordingly, the Takashimizu patent does not anticipate dependent claims 11 and 13.

In section 6 of the office action, the Examiner rejected claims 1-4, 18, and 19 under 35 U.S.C. §103(a) as being unpatentable over the Takashimizu patent in view of the Citta patent.

Independent claim 1 is directed to a digital television signal translator comprising a tuner, a demodulator, a data replacer, and a modulator. The tuner is tuned to receive an RF digital television signal on a first selected television channel. The demodulator

provides a baseband television signal from the RF digital television signal to which the tuner is tuned, and the baseband television signal includes a data component identifying the first selected channel. The data replacer modifies the baseband television signal by replacing the data component identifying the first selected channel with a data component identifying a second selected channel different from the first selected channel, and the data component identifying the second selected channel is not contained in the received RF digital television signal. The modulator modulates the baseband television signal including the data component identifying the second selected channel for transmission as a digital television signal on the second selected channel.

Applicants' Argument - The Takashimizu patent discloses replacement of a program association table containing information on a plurality of programs with a program association table containing only the information relating to the selected program.

However, there is no disclosure in the Takashimizu patent that the replacement program association table contains the second selected channel as defined in independent claim 1, i.e., a channel over

which the signal containing the replacement data is re-transmitted.

Moreover, the Citta patent does not disclose data replacement at all.

Therefore, because neither the Takashimizu patent nor the Citta patent discloses replacing a component identifying the signal over which a signal is received with a component identifying the signal over which a signal is re-transmitted, a combination of the Takashimizu patent and the Citta patent cannot teach or suggest the invention of independent claim 1.

Accordingly, independent claim 1 is not unpatentable over the Takashimizu patent in view of the Citta patent.

Also, independent claim 1 recites that the replacement data component is different than the data component to be replaced.

As discussed above, there is no disclosure in the Takashimizu patent that the replacement data component is different than the data component to be replaced.

Moreover, the Citta patent does not disclose data replacement at all.

Therefore, for this reason also, a combination of the Takashimizu patent and the Citta patent cannot teach or suggest the invention of independent claim 1.

Accordingly, independent claim 1 is not unpatentable over the Takashimizu patent in view of the Citta patent.

Furthermore, independent claim 1 recites that the data component identifying the second selected channel is not contained in the received RF digital television signal.

There is no disclosure in the Takashimizu patent that the replacement program association table contains a channel that is not contained in the received signal.

Moreover, the Citta patent does not disclose data replacement at all.

Therefore, for this further reason, a combination of the Takashimizu patent and the Citta patent cannot teach or suggest the invention of independent claim 1.

Accordingly, independent claim 1 is not unpatentable over the Takashimizu patent in view of the Citta patent.

The Examiner's Response - The Examiner asserts that the Takashimizu patent and the Citta patent do indeed disclose the features of independent claim 1.

Applicants' Rebuttal - The Takashimizu patent does not disclose (i) that the replacement program association table identifies the channel over which the signal is received and that this channel is replaced with the channel over which the signal is to be re-transmitted, (ii) that the replacement channel is different than the channel to be replaced, and (iii) that the replacement channel is not contained in the received signal. Therefore, the Takashimizu patent cannot disclose independent claim 1.

Moreover, the Citta patent does not disclose data replacement at all.

Accordingly, independent claim 1 is not unpatentable over the Takashimizu patent in view of the Citta patent.

Because independent claim 1 is not unpatentable over the Takashimizu patent in view of the Citta patent, dependent claims 2-4, 18, and 19 likewise are not unpatentable over the Takashimizu patent in view of the Citta patent.

In addition, dependent claims 2 and 4 recite the re-computing of a cyclic redundancy code based upon the new data component and the replacement of the old cyclic redundancy code with the re-computed cyclic redundancy code.

Applicants' Argument - The Takashimizu patent merely discloses that a CRC code of the replacement data may be calculated or added to the data 21 of the actual packet. The Takashimizu patent does not also disclose that a CRC contained in the received signal is replaced by the newly calculated CRC.

For this reason also, the Takashimizu patent likewise does not anticipate dependent claims 2 and 4.

The Examiner's Response -The Examiner responded as the Examiner did with respect to dependent claims 11 and 13.

Applicants' Rebuttal - The paragraph cited by the Examiner does not disclose or suggest that a CRC of an incoming signal be replaced with a new CRC. The Takashimizu patent merely discloses that a CRC be calculated and added to the signal, not replaced in the signal. Neither does the Citta patent disclose these features of the invention.

For this reason also, dependent claims 2 and 4 are patentable over the Takashimizu patent in view of the Citta patent.

In section 7 of the Office Action, the Examiner rejected claims 5-8 under 35 U.S.C. §103(a) as being unpatentable over the Takashimizu patent in view of the Citta patent and further in view of the Reitmeier patent.

Applicants' Argument - The Reitmeier patent does not disclose modifying an electrical signal as recited in independent claim 1. Instead, the Reitmeier patent discloses a tuning system in which channel information is stored in a look up table so that, when a user selects a virtual channel, the tuner is instead tuned to the physical channel that corresponds to the virtual channel in the look up table. In other words, the look table stores the concordance between virtual channels and corresponding physical channels. This table is stored and updated based on an electronic programming guide or PSIP channel information.

Accordingly, the Reitmeier patent does not disclose (i) that the replacement program association table identifies the channel over which the signal is received and that this channel is replaced with the channel over which the signal is to be re-transmitted,

(ii) that the replacement channel is different than the channel to be replaced, and (iii) that the replacement channel is not contained in the received signal. Therefore, the Reitmeier patent cannot disclose independent claim 1.

Consequently, because the Reitmeier patent does not disclose modifying an electrical signal as recited in independent claim 1, and because, as discussed above, the Takashimizu patent and the Citta patent also do not disclose modifying an electrical signal as recited in independent claim 1, the combination of the Takashimizu patent, the Citta patent, and the Reitmeier patent does not teach the invention of independent claim 1.

Therefore, independent claim 1 is not unpatentable over the Takashimizu patent in view of the Citta patent and further in view of the Reitmeier patent.

Because independent claim 1 is not unpatentable over the Takashimizu patent in view of the Citta patent and further in view of the Reitmeier patent, dependent claims 5-8 are likewise are not unpatentable over the Takashimizu patent in view of the Citta patent and further in view of the Reitmeier patent.

In addition, dependent claims 6 and 7 recite the re-computing of a cyclic redundancy code based upon

the new data component and the replacement of the old cyclic redundancy code with the re-computed cyclic redundancy code.

The Takashimizu patent merely discloses that a CRC code of the replacement data may be calculated or added to the data 21 of the actual packet. The Takashimizu patent does not also disclose that a CRC contained in the received signal is replaced by the newly calculated CRC.

For this reason also, dependent claims 6 and 7 are patentable over the Takashimizu patent in view of the Citta patent and further in view of the Reitmeier patent.

The Examiner's Response - With respect to claims 5-8, the Examiner asserts that the Takashimizu patent and the Citta patent do indeed disclose all of the limitations of independent claim 1. With respect to claims 6 and 7, the Examiner asserts that the Takashimizu patent does indeed disclose CRC replacement.

Applicants' Rebuttal - As discussed above, the Takashimizu patent does not disclose the contents of the replacement program association table that is stored in the storage circuit 42 except that the storage circuit 42 stores the PID of the PMT packet for the presently recorded program. There is no disclosure that this PID

identifies the channel over which the received signal is to be re-transmitted as required by independent claim 1 or that this replacement PID is different than a PID in the received signal as also required by independent claim 1 or that this PID identifies a channel that was not contained in the signal as received as further required by independent claim 1. The Citta patent does not disclose replacement data at all.

Accordingly, because independent claim 1 is not disclosed by either the Takashimizu patent or the Citta patent, dependent claims 5-8 cannot be unpatentable over the Takashimizu patent in view of the Citta patent and further in view of the Reitmeier patent.

Moreover, the Takashimizu patent does not disclose or suggest that a CRC of an incoming signal be replaced with a new CRC. The Takashimizu patent merely discloses that a CRC be calculated and added to the signal, not replaced in the signal.

Accordingly, dependent claims 6 and 7 are not unpatentable over the Takashimizu patent in view of the Citta patent and further in view of the Reitmeier patent.

In section 8 of the Office Action, the Examiner rejected claims 14-17 under 35 U.S.C. §103(a) as being

unpatentable over the Takashimizu patent in view of the Reitmeier patent.

Applicants' Argument - Because, as discussed above, the Takashimizu patent and the Citta patent do not disclose modifying a digital television signal by replacing a data component identifying the first selected channel with a data component identifying a second selected channel, where the data component identifying the second selected channel is different than the first selected channel, and where the data component identifying the second selected channel is not contained in the received digital television signal, the combination of the Takashimizu patent and the Citta patent does not teach the invention of independent claim 9.

Therefore, independent claim 9 is not unpatentable over the Takashimizu patent in view of the Citta patent.

Because independent claim 9 is not unpatentable over the Takashimizu patent in view of the Citta patent, dependent claims 14-17 are likewise are not unpatentable over the Takashimizu patent in view of the Citta patent.

In addition, dependent claims 15 and 17 recite the re-computing of a cyclic redundancy code based upon

the new data component and the replacement of the old cyclic redundancy code in the PSIP packet with the re-computed cyclic redundancy code.

The Takashimizu patent merely discloses that a CRC code of the replacement data may be calculated or added to the data 21 of the actual packet. The Takashimizu patent does not also disclose that a CRC contained in the received signal is replaced by the newly calculated CRC.

For this reason also, dependent claims 15 and 17 are patentable over the Takashimizu patent in view of the Citta patent.

The Examiner's Response - With respect to claims 14-17, the Examiner asserts that the Takashimizu patent and the Citta patent do indeed disclose all of the limitations of independent claim 9. With respect to claims 15 and 17, the Examiner asserts that the Takashimizu patent does indeed disclose CRC replacement.

Applicants' Rebuttal - As discussed above, the Takashimizu patent does not disclose the contents of the replacement program association table that is stored in the storage circuit 42 except that the storage circuit 42 stores the PID of the PMT packet for the presently recorded program. There is no disclosure that this PID

identifies a channel that was not contained in the signal as received or is different than a PID that is contained in the received signal as required by independent claim 9. The Citta patent does not disclose replacement data at all.

Accordingly, because independent claim 9 is not disclosed by either the Takashimizu patent or the Citta patent, dependent claims 14-17 cannot be unpatentable over the Takashimizu patent in view of the Citta patent.

Moreover, the Takashimizu patent does not disclose or suggest that a CRC of an incoming signal be replaced with a new CRC. The Takashimizu patent merely discloses that a CRC be calculated and added to the signal, not replaced in the signal.

Accordingly, dependent claims 15 and 17 are not unpatentable over the Takashimizu patent in view of the Citta patent.

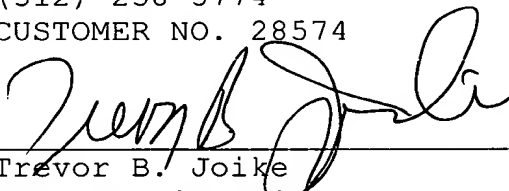
CONCLUSION

In view of the above, it is clear that the claims of the present application are patentable over the references applied by the Examiner. Accordingly, allowance of these claims and issuance of the above captioned patent application are respectfully requested.

Respectfully submitted,

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September 2, 2004